AMENDMENTS TO THE DRAWINGS

Please delete Figures 46-49.

REMARKS

Please reconsider the application in view of the foregoing amendments and the following remarks.

Status of Claims

Claims 1-3, 5 are pending in the present application. Claims 11-34 have been withdrawn from consideration. Claims 1, 9 and 10 are herein amended incorporating the limitations of claim 4. Claim 4 is herein cancelled. Claim 5 has been amended to correct the dependency thereof. No new matter has been presented.

Specification

In response to the Examiner's objection of the disclosure, Applicants have amended paragraph [0050] to delete the brief descriptions that correspond to the deleted drawings.

Drawings

Applicant herein cancels Figures 46-49 (previously Figures 71-74) because they are only referred to in previously deleted paragraphs [0299]-[0506] of the detailed description of the present specification.

As to the Merits:

As to the merits of this case, the Examiner sets forth the following rejections:

The Examiner has rejected claims 1-2 and 9-10 under 35 U.S.C. 102 (b) as being anticipated by **Szu et al.** U.S. Patent No. 5,909,965 (hereinafter Szu).

The Examiner has rejected claim 3 under 35 U.S.C. 103(a) as being unpatentable over **Szu et al.** U.S. Patent No. 5,909,965 (hereinafter Szu) in view of **Drennen et al.** U.S. Publication No. 2002/0189385 (hereinafter Drennen).

The Examiner has rejected claims 4-7 under 35 U.S.C. 103(a) as being unpatentable over **Szu et al.** U.S. Patent No. 5,909,965 (hereinafter Szu) in view of **Drennen et al.** U.S. Publication No. 2002/0189385 (hereinafter Drennen) and in view of **Hirai et al.** U.S. Patent 6,587,747 (hereinafter Hirai).

Each of these rejections is respectfully traversed.

Amended claim 1 recites a feature that a unit vector in the i-axis direction is rotated by an angle α about the j-axis, before being rotated by an angle β about the k-axis, thus producing a tangent vector u which is a unit vector showing a tangential direction of a clothoid curve. The three-dimensional clothoid curve is generated by using the tangent vector u.

On the contrary thereto, in Szu, a spatial clothoid curve is generated by using two mutually intersecting clothoidal surfaces(column 6, lines 28-46). Or a spatial clothoid curve is

generated by developing a planar clothoidal curve into an assigned curved surface(e.g. a cylindrical surface)(column 6, lines 47-54).

Szu fails to disclose the above feature of amended claim 1.

Examiner asserts that the equation expressions, parameters and variables present in claim 4 are obtainable by performing mathematical manipulations known in this art. Hirai teaches similar mathematical manipulations and expressions (see for example column 8, lines 1-27).

However, Hirai only teaches the coordinate transformation from the workpiece coordinate system into the machine coordinate system(column 7, lines 54-57). The coordinate transformation of Hirai is not used for generating a curve.

As such, withdrawal of each of the above rejections is respectfully requested.

Conclusion

The Claims as amended have been shown to be allowable over the prior art. Applicants believe that this paper is responsive to each and every ground of rejection cited in the Office Action dated December 21, 2009, and respectfully request favorable action in this application. The Examiner is invited to telephone the undersigned, applicants' attorney of record, to facilitate advancement of the present application.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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